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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/353,448 | 07/14/1999 | YOSHIO SAKATA | 32178-149711 | 3541 |

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EXAMINER

NGUYEN, DUC MINH

| ART UNIT | PAPER NUMBER |
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2643

DATE MAILED: 08/27/2003

7

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/353,448

Applicant(s)

SAKATA ET AL.

Examiner

Duc Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 4-14 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 4-13 is/are rejected.
- 7) ☒ Claim(s) 14 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). ____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____ 6) ☐ Other:

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DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

2. Claim 4 is rejected under 35 U.S.C. 102(e) as being anticipated by Takada et al (6,236,725).

Consider claim 4. Takada teaches an echo canceler that eliminates echos produced in an echo path formed between a loudspeaker (4) that converts receiving signals ($X(n)$) into voice output and a microphone (5) that converts voice input into sending signals, comprising an adaptive filter (10); a subtracter (7), wherein the tap coefficients of the adaptive filter are modified

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responsive to the part of the receiving signals and a part of the echo canceled sending signal (e₁(n)) (see fig. 1, 5-6; step gain generator 18; see the entire abstract; col. 3, ln. 55-65; col. 9, ln. 14-49).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 5-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takada et al (6,236,725) in view of Yoshida et al (JP407264279A).

Consider claims 5-6. Takada does not teach the use of attenuator.

Yoshida teaches an echo canceler for eliminating echos produced through an echo path formed between a loudspeaker (109 or 111) and microphone (114), comprising an adaptive digital filter (112a); an attenuator (115); and a subtracter (105a). In order for the echo canceler to cancel the unwanted echo signal completely, the pseudo echo signal produced by ADF (112a) must have an amplitude that substantially equals to the amplitude of the signal produced by attenuator (115), but 180 degrees out of phase. Fig. 1 clearly shows controller (113) controls both the ADF (112a) and the attenuator (115). There is a great possibility and inherent that the controller (113) controls the amplitude of the signal produced by the ATT (115) to substantially

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match with the pseudo echo signal produced by ADF (112a), so that echo signal can be canceled completely. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the teaching of Yoshida into the teaching of Takada in order to control the amplitude of the signal produced by the ATT (115) to substantially match with the pseudo echo signal produced by ADF (112a), so that echo signal can be canceled completely.

Consider claim 7. Takada in view of Yoshida does not teaches the attenuator is a fixed attenuator. However, Fixed is word of relative meaning; it can have many shades of meaning, from absolutely unchangeable to relatively unchangeable. *Palmer v. McLamore, Minneman & Dunn* (CCPA) 105 USPQ 275. The attenuation (115) can relatively be fixed to a particular attenuation level.

5. Claims 8-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takada et al (6,236,725) in view of Yoshihama et al (JP408279777A).

Consider claims 8-9. Takada does not teach an amplifier used to amplify the pseudo echo signal so that the amplitude level of the pseudo echo signal is matched to that of the echo noises.

Yoshihama teaches an echo canceler for eliminating echos produced through an echo path formed between a loudspeaker (connected to line 16, fig. 1)) and microphone (connected to line R), comprising an adaptive digital filter (ringer buffer 12 and echo estimator 11; see also fig. 3); a subtracter (14); and an amplifier (13) used to amplify the pseudo echo signal so that the amplitude level of the pseudo echo signal is matched to that of the echo noises. In order for the echo

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canceler to cancel the unwanted echo signal completely, the pseudo echo signal produced by ADF (ringer buffer 12 and echo estimator 11; see also fig. 3) must have an amplitude that substantially equals to the amplitude of the echo signal (R), but 180 degrees out of phase. Therefore, there is a great possibility and inherent that the pseudo echo signal produced by the amplifier (13) must substantially match with the echo signal (R), so that echo signal can be canceled completely. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the teaching of Yoshihama into the teaching of Takada in order to control the pseudo echo signal produced by the amplifier (13) to substantially match with the echo signal (R), so that echo signal can be canceled completely.

Consider claim 10. Takada in view of Yoshihama does not explicitly teach a fixed amplifier. However, Fixed is word of relative meaning; it can have many shades of meaning, from absolutely unchangeable to relatively unchangeable. *Palmer v. McLamore, Minneman & Dunn* (CCPA) 105 USPQ 275. The amplifier (13) can relatively be fixed to a particular amplifier level.

6. Claims 11-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takada et al (6,236,725) in view of Fujisaki et al (JP362269451A).

Consider claims 11, 13. Takada does not teach an amplifier.

Fujisaki teaches an echo canceler for eliminating echos produced through an echo path formed between a loudspeaker (6) and microphone (7), comprising an adaptive digital filter (4); a subtracter (5); and an amplifier (2; see fig. 1). In order for the echo canceler to cancel the

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unwanted echo signal completely, the pseudo echo signal (\hat{y}) produced by ADF (4) must have an amplitude that substantially equals to the amplitude of the echo signal produced by the amplifier (3), but 180 degrees out of phase. There is a great possibility and inherent that the amplitude of the pseudo echo signal is substantially matched to that of the echo noises, so that echo signal can be canceled completely. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the teaching of Fujisaki into the teaching of Takada in order to control the amplitude of the pseudo echo signal substantially matched to that of the echo noises, so that echo signal can be canceled completely.

7. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Takada et al (6,236,725) in view of Fujisaki et al (JP362269451A) as applied to claim 11 above, and further in view of Hemkumar et al (6,212,273).

Consider claim 12. Takada in view of Fujisaki does not teach the use of a variable amplifier.

Hemkumar teaches the use of a variable amplifier (mute/volume control 148).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the teachings of Hemkumar into the teachings of Takada in view of Fujisaki, so that echo signal can substantially be canceled completely.

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Allowable Subject Matter

8. Claim 14 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

9. Applicant's arguments with respect to claims 1-14 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

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11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Duc Nguyen whose telephone number is (703) 308-7527.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Kuntz, can be reached on (703) 305-4708.

Any response to this final action should be mailed to:

Box AF


Commissioner of Patents and Trademarks
Washington, D.C. 20231

or faxed to:

(703) 872-9315 (Group's Fax numbers)
(703) 746-7251 (Examiner's Fax number, only for proposed amendment)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA., Sixth Floor (Receptionist).

August 18, 2003


DUC NGUYEN
PRIMARY EXAMINER